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ABSTRACT

Proceedings of a study group that considered the utility of the Higher Education General Information Survey (HEGIS) finance data for institutional and higher educational sector comparisons are presented, as are issue papers and descriptive information. The study group of representatives from higher education institutions and organizations outlined potential problem areas in using HEGIS finance data for comparison purposes, made recommendations for improving the way in which HEGIS finance data are collected and disseminated, and produced four issue papers describing the experiences of higher education institutions, state coordinating boards, and research organization in using HEGIS finance data. The development of the HEGIS finance survey is summarized, and references listing HEGIS data studies are presented. The issue papers are written by Marilyn McCoy, Lucie Lapovsky, Elwin R. Cammack, and James A. Hyatt and Robert K. Thompson. (SW)

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An Analysis of the Utility of HEGIS Finance Data in Conducting Institutional and Higher Education Sector Comparisons

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Proceedings
of the
Joint Study Group
on the
Utility of HEGIS Finance Data
May 22-23, 1980
Washington, D.C.

Study Group Organized
by
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and
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References

Preface

On May 22 and 23, 1980, a joint study group of representatives from higher education institutions and organizations met in Washington, D.C. to discuss the utility of HEGIS finance data for institutional and higher educational sector comparisons. Areas of major concern discussed by the study group included ways of improving the comparability and consistency of HEGIS finance data and ways of highlighting problems relative to the use of HEGIS finance data for research purposes. The principal products developed by the study group included:

1. caveats outlining potential problem areas in using HEGIS finance data for comparison purposes;

2. recommendations for improving the way in which HEGIS finance data are collected and disseminated; and

3. four issue papers describing the experiences of higher education institutions, state coordinating boards, and research organizations in using HEGIS finance data.

This report contains the proceedings, in addition, a brief section highlighting the development of the HEGIS finance survey as well as references listing HEGIS data studies.

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Introduction

The joint study group on the utility of HEGIS finance data was formed to address issues surrounding the increased use of HEGIS finance data in conducting institutional and intersector comparisons. The following section briefly summarizes the development of the HEGIS finance survey and outlines the purpose of the study group.

Background of the HEGIS Finance Survey

Development of the Survey

In 1965, the National Center for Education Statistics (NCES) was established to produce statistics on educational institutions and to supply data to the Congress and the public. Since 1966, NCES has collected information on enrollment, student characteristics, financial statistics, earned degrees, staff characteristics, and other areas of interest to the higher education community. In that year, NCES implemented a coordinated data collection system. A yearly survey packet was developed that contained all the forms for several area surveys, each with its own separate due date. The schedule contained in the packet enabled institutions to know in advance the type of information required for each survey. Financial data, for example, were collected with a form entitled "Financial Statistics of Institutions of Higher Education." This form was used to gather data on current funds revenues and expenditures, physical plant assets, indebtedness on physical plant, and endowments.

In 1973, NCES sponsored a working group of members of the American Institute of Certified Public Accountants (AICPA), the National Association of College and University Business Officers (NACUBO), and the National Center for Higher Education Management Systems (NCHEMS). This group coordinated definitions and data structures for the AICPA's Audits of Colleges and Universities, NACUBO's Administrative Service, and NCHEMS' Higher Education Finance Manual. In fiscal year 1975, NCES adopted the definitions and structures produced by this group for its collection of current funds expenditures and revenues data. Though these changes facilitated the reporting process, they also made it difficult to conduct historical trend analyses using HEGIS finance data. With the exception of a number of minor revisions, the structures and definitions adopted by NCES in 1975 have remained unchanged through 1980.

A Review of Studies That Have Used HEGIS Financial Statistics

A quick review of some studies that have used HEGIS finance data will provide some examples of what has been done and what can be done with HEGIS finance data. The reader should note that the studies outlined below are not intended to encompass all possible uses of HEGIS data but merely to provide the reader with some perspective on how HEGIS data have been used in the past.

In 1972, after corresponding with institutions providing data for HEGIS, NCES made available detailed financial data in machine-readable form. This permitted several states to use such data without the expense of a separate survey. Several states immediately used available HEGIS data for their own analyses of institutional finances. The State of Nebraska in 1975, for example, used HEGIS finance data of comparable institutions to determine the adequacy of financing for the University of Nebraska (relative to Big Eight institutions) and community colleges (relative to those of surrounding states). In this instance HEGIS data were supplemented by additional data from Big Eight institutions, particularly with regard to enrollments by department and in interpretations of individual institutional data. This analysis led, over the next several years, to the development of a HEGIS-based reporting system in the state and to continued use of comparative data.

Another instance in which HEGIS finance data were used in addressing state policy issues occurred in New York. The New York Temporary Commission on the Future of Postsecondary Education was concerned about the condition of independent colleges and universities in New York as well as the financial problems of public institutions in New York City. It had commissioned a study (released in 1977) of independent institutions, which used five financial indicators: enrollment share, one-year and three-year ratios of income and expenses, debt per student, and annual debt service per student. The report identified institutions whose financial indicators were judged to be outside an "acceptable range." This approach relied on opinions of experts to determine the value range for "financial distress," and the results were used for decisions on the funding of independent institutions. At the same time, the New York State Education Department was establishing a data base called DATACORE. This data base included responses of New York institutions to the HEGIS survey and a supplement that requested additional information, particularly on student financial aid. This data base has been available since 1974 and from it New York periodically publishes financial profiles of state-aided colleges and universities. Financial indicators, such as the ratio of tuition to educational and general expenditures, are available in the profiles.

The State of New Jersey has also used HEGIS finance data to address state policy issues. The New Jersey Commission on Financing Postsecondary Education made an extensive study of nationwide HEGIS enrollment and finance data. The commission developed a set of financial idicators to analyze the financial condition of institutions, particularly the New Jersey colleges and universities. In 1977, it recommended an increased funding level for both public and private institutions.

At the national level, the federal government has used HEGIS data to establish several general economic indicators for the educational sector. Developed by D. Kent Halstead, these indicators include the Higher Education Price Index, Research and Development Price Index, Capital Equipment Index, and the Construction and Equipment Index. They are available by type of institution. The construction of these indicators is based on expenditure weights calculated in part from HEGIS finance data.

A recently published study by Marilyn McCoy and D. Kent Halstead, entitled Higher Education Financing in the Fifty States: Interstate Comparisons, Fiscal Year 1976, also used HEGIS finance data to provide state-by-state comparisons of several financial factors. The study highlighted recent trends in the support of higher education by such sources as state and federal funds and tuition, and described the extent to which state appropriations have kept pace with enrollment shifts and changes in the inflation rate. While the McCoy-Halstead study was more comprehensive than any study yet published, it suffered from limitations inherent in the data used. One of the objectives of the HEGIS study group was to identify these data comparability problems and to recommend ways of improving the utility of HEGIS finance data.

The list of references at the end of this document contains a number of studies in which HEGIS finance data have been used . The reader is encouraged to consult these materials for additional information on the use of HEGIS financial statistics.

Purpose of the Joint Study Group on the Utility of HEGIS Finance Data

On May 22 and 23, 1980, a joint study group of higher education institutional, state, and federal representatives was convened in Washington, D.C. to identify issues concerning the utility of HEGIS finance data for institutional and higher education sector comparisons. Areas of principal concern in terms of the utility of HEGIS finance data related to the consistency and comparability of the data collected. The principal objectives of the study group, therefore, were: (1) to review current uses of HEGIS finance data; (2) to examine problem areas related to the utility of HEGIS finance data; and (3) to outline recommendations and mechanisms whereby the utility of HEGIS finance data could be improved.

The following sections outline the proceedings of the study group, including a discussion of some possible uses of HEGIS finance data for identification of problem areas and a list of specific recommendations.

Chapter 1

Potential Users and Uses of HEGIS Finance Data Identified by the Study Group

In order to more clearly define problems associated with the utility of HEGIS finance data, the study group devised a two-dimensional grid to highlight potential uses of the data. This grid is depicted in the figure below. It should be noted that the taxonomy shown in the figure describes potential and not suggested users and uses of HEGIS finance data. Among the potential users of the data identified by the study group were:

- o federal policy analysts,
- o regional associations,
- o state higher education groups or systems, and
- o institutions.

Potential HEGIS data uses identified by the group included:

- o policy/issue analysis,
- o planning,
- o budgeting,
- o identifying peers, and
- o financial indicators or diagnosis.

	POTENTIAL HEGIS DATA USES				
POTENTIAL USERS	Policy/Issue Analyses	Planning	Budgeting	Finding Peers	Diagnosis
Federal Policy Analysts					
Regional Associations					
State Higher Education Groups or Systems					
Institutions					

In identifying potential users and functions of HEGIS finance data, the study group noted that HEGIS data were often used by institutions and states prior to their publication by NCES and frequently used in combination with additional data from other sources. A more complete analysis of potential data users and functions of HEGIS finance data is outlined below.

Users of HEGIS Finance Data

At the national level HEGIS finance data are used by national policy analysts. National aggregates are made available by NCES to assist federal policy formulation and administrative program evaluation. Federal policy is concerned with trends in higher education as a whole, including the growth of the enterprise, its financial condition, and overall enrollments. Federal policy may also be concerned wth interstate comparisons. For example, the federal government may wish to know if federal funds to higher education are equitably distributed among the states. At the institutional level federal policy may focus on the effect various institutional and student aid programs have on the financial condition of institutions or sectors.

A second group of HEGIS data users exists at the regional level. The Southern Regional Education Board (SREB), for example, uses HEGIS finance data to summarize median revenue and expenditure trends for its member institutions. The data are made available to SREB by the states and SREB makes these institutional statistics available on a regional basis.

The third level of HEGIS data users are the states, which prepare comparative data summaries from HEGIS data. Iowa, for example, makes institutional data available yearly for both public and independent institutions. For many institutions in Iowa, this comparison provides the best indication of progress or setbacks in changes in their financial well-being.

Finally, institutions use HEGIS summaries for their own analytical studies. Often these data are supplemented with information from other sources and the information is used in comparing institutional performance with national trends. In this regard it should be noted that institutions often share data that are based on HEGIS definitions. An example of institutional use of HEGIS finance data is contained in a joint NACUBO, ACE, AACJC, and NCES study, entitled "Comparative Financial Statistics for Community and Junior Colleges: 1978-79." This study combines recent HEGIS data with information from several other sources to calculate operating statistics on revenues and expenditures per FTE student. One of the principal purposes of the study was to assist institutions in preparing meaningful analyses of how their performance related to peer group norms. In a similar manner, the Florida Board of Regents used national figures on finance compared with enrollments in order to compare the operation of Florida's universities with that of other states.

Potential Uses of HEGIS Finance Data

The second dimension highlighted in the figure relates to the potential functions of HEGIS finance data. The first function for which HEGIS finance information can be used is that of issue-oriented policy

analysis. HEGIS finance data, for example, can be used to examine the impact of institutional aid on institutions. It should be noted that the use of HEGIS finance data in issue-oriented policy analysis is highly dependent on the quality and timeliness of the data and, as a result, policy analysis often must couple HEGIS data with data from other sources.

A second potential use of HEGIS finance data relates to planning. Institutions, college and university systems, and states often use HEGIS data to examine revenue and expenditure patterns over time. These types of analyses can provide valuable information on trends that need to be considered in developing future financial plans. In a similar manner, HEGIS finance data can aid in the budgeting process by providing an overview of higher education expenditure and revenue patterns at the state and national level. It is important to note, however, that HEGIS finance data are only one of many resources available for use in the planning and budgeting process.

One of the most frequent uses of HEGIS finance data is in the identification of peer institutions. HEGIS finance data can be used with other HEGIS data to identify groups of institutions having similar programs, student markets, and resource patterns. More detailed information can then be acquired from these institutions to provide the basis for more detailed peer group analyses.

Finally, trends in HEGIS financial information may be used to highlight specific strengths and weaknesses. A rough diagnosis of financial condition using HEGIS finance data may indicate the need to investigate the performance of specific areas more carefully. For example, a major expansion in the proportion of an institution's budget dedicated to student services, with little noticeable improvement in service, may indicate the need to investigate this function further. HEGIS finance data have also been used in the development of a number of financial indicators of institutional performance.

Chapter 2

Comparability Problems Identified by the Study Group

Based on the uses of HEGIS finance data outlined in chapter 1, the study group proceeded to identify problems in using HEGIS finance data for institutional and higher education sector comparisons. The problem areas identified by the study group are outlined below.

Identification of Problems Related to the Collection and Dissemination of HEGIS Finance Data

One of the principal objectives of the study group was the identification of problems associated with the collection and dissemination of HEGIS finance data. This process of problem identification was greatly facilitated by the composition of the study group. Participation by representatives from institutional, state, and federal levels ensured that problems associated with the collection and dissemination of HEGIS finance data were viewed from a variety of perspectives. In this regard the study group considered it important to identify not only those problems related to the substance or quality of the data but also those problems related to the process by which the data were collected and disseminated. Outlined below are a series of problems identified by the study group.

Response Rate

The study group felt that a high response rate from a consistent set of institutions was essential for using HEGIS data in longitudinal studies. Representatives from NCES indicated that the composition of the institutional group used in compiling the HEGIS finance data base varied from year to year. The study group indicated that this could result in misleading historical comparisons. It was suggested that a HEGIS user manual be introduced, which would highlight those institutions responding to a particular survey.

The study group also suggested that HEGIS finance data could be more useful in conducting trend analyses if the historical data tapes were updated annually to reflect institutional corrections. A number of researchers currently go through an editing process to incorporate changes to the HEGIS data file, and NCES may want to draw upon their experience in updating the HEGIS tapes. The National Science Foundation (NSF), for example, currently employs a revision process to increase the accuracy of its historical data.

One of the major response rate issues identified by the study group was how to increase institutional involvement. One means of accomplishing this would be through increased feedback to institutions, using the data provided. Institutional profile reports that contain multiyear HEGIS finance data and that integrate them with other HEGIS data, e.g., enrollments, would be particularly useful. The study group also noted the importance of the role of state coordinating boards in collecting HEGIS

data. The group suggested that, given the proximity and familiarity ofof coordinating boards with institutions, these organizations could do much to ensure the consistency of the data collected and to aid reporting by providing interpretive assistance to data providers.

Employee Benefits

The study group noted that state payments for employee benefits do not always flow through institutional accounts. In some states these payments are made directly to the institutions; in other states they are handled by a separate state agency. The value of these payments should be imputed and reported on the HEGIS finance form, but this is not being done in all cases. When one state does include these payments, and another state does not, the result is substantially noncomparable data.

Tuition and Fees

In some states institutions follow the process of using tuition and fees as an offset to state appropriations and in some cases tuition and fees go directly into state general revenues. In instances where this occurs, the HEGIS form indicates that these funds should be reported under tuition and fees and not under state appropriations. If this procedure is not followed, state appropriations may be overstated by the amount of tuition and fees that have been remitted.

The study group also noted that remissions and exemptions of tuition and fees should be reported under tuition and fee revenues. If this is not done, these revenues will be understated.

Diversity of Appropriation Structures

The study group noted that an institution may receive state and federal funds through a variety of appropriation structures. For example, an institution may receive state funds to provide public health labs, to provide indigent care,, or to engage in a number of other public service activities. In other states these types of activities are carried out through appropriations to other state agencies. If only total institutional expenditures are compared, this can lead to inappropriate institutional and state comparisons. A careful examination of the components of these expenditures would do much to explain differences in the public service component of institutional expenditures.

Diversity of Organization Structures

The study group indicated that differences in the way data were reported for medical schools, central administration, and the operation of extension and research institutes can often lead to data comparability problems. Differences in reporting practices relative to health professional programs can cause particular problems in conducting inter-institutional and interstate comparisons. McCoy and Halstead (1980)found that "in 18 states, there are distinct functional and enrollment data associated with a comprehensive health institution. In 22 states, the health professional programs are part of an overall institution, and health finance and enrollments are not separable." Even within individual states the treatment of comprehensive health science

institutions can vary. In California, for example, there is one separate medical school (University of California, San Francisco) and one that is part of a larger campus (University of California, Los Angeles). The diversity of organizational structures can also cause problems in comparing data for individual institutions with data for institutions that are part of a university system. Financial comparability problems can occur if revenue and expenditure data associated with operation of the system's central administration are not appropriately allocated to the individual institutions of the system.

The study group also noted that at some campuses agricultural extension and agricultural experimentation programs are separately organized and budgeted while at others they are not. These different organizational arrangements can lead to problems in comparing costs.

The study group also questioned whether financial data should be collected on state higher education boards, coordinating boards, and foundations. Where services are provided to institutions by these organizations, their inclusion in the HEGIS universe would improve the quality of interstate comparisons. The study group also indicated that statewide governing boards typically are included in HEGIS data while coordinating boards, which perform many similar functions, are excluded. In a recent survey of state funding and financing practices by the State Higher Education Executive Officers (SHEEO), a significant number of respondents indicated expenditures for central boards, offices, or commissions, which were not reported in HEGIS.

Universe Encompassed by the HEGIS Finance Survey

Approximately 3,170 institutions are included in the HEGIS universe. The institutional composition of this universe can change from year to year. Changes in the composition can make it difficult to conduct longitudinal studies using HEGIS finance data. In a related matter the study group noted that some states provide finance data on the postsecondary component of vocational and technical institutions while other states do not provide these data. The study group felt that these variations in reporting practices among states can make interstate comparisons of vocational and technical institutions extremely difficult.

Classification Structure Used by the HEGIS Finance Survey

The study group expressed concern that the classification structure used by HEGIS appropriately differentiate various types of institutions. The group felt that this was a particularly important factor in conducting appropriate comparisons of like institutions. Representatives of NCES indicated that their agency was aware of the problem and that Rolf M. Wulfsberg of NCES and David J. Makowski of NCHEMS were working on the development of a new classification of postsecondary institutions. This classification is designed to improve upon earlier taxonomies developed by the Carnegie Commission, NCES, and the Federal Interagency Committee on Education.

Student Aid Support

The study group was concerned that the amount of student aid support reported in HEGIS may be understated by the amount of support going directly to students. In this regard it was noted that HEGIS was never intended to collect this information because HEGIS collects financial data only on student aid expended directly by the institution. As a result, interstate comparisons of student aid based solely on HEGIS finance data can underestimate student aid expenditures within a state. The study group, therefore, noted that, in order to conduct valid interstate comparisons, the amount of student aid reported in HEGIS must be coupled with data on the amount of student aid provided directly by the state. State data could include student aid funds expended through outright scholarship grants, fellowship stipends, and work-study support for individuals enrolled in formal postsecondary coursework, either for credit or noncredit. In a recent survey of state funding and financing practices by SHEEO, a significant number of states reported the existence of some form of student aid that was not reflected in institutional expenditures. Most of these expenditures were in the form of scholarships and grants, as opposed to work-study.

Debt Arrangement and Service

Variance in the way debt service is included in institutional HEGIS reports can seriously hamper institutional comparisons. In some states, the capital cost of physical facilities is financed through a separate state agency. In other states, debt service is paid for with current funds. In those instances where debt service is handled by the state, the finances of the institution will be understated relative to those institutions that directly handle their own debt service.

In a recent SHEEO survey of state funding and financing practices, a significant number of respondents reported debt service funds that appear in institutional accounts as either state and local appropriations, tuition and fee revenue, or auxiliary enterprise revenue.

In order to improve the reporting of debt service, the study group felt that the definition of debt service contained in the HEGIS finance form should be clarified. In addition, the group noted that the user of HEGIS finance data should be able to identify the amount of debt service associated with a particular campus.

Reporting Practices

Institutional reporting practices relative to HEGIS can vary from year to year and from institution to institution. Though there has been a concerted effort by NACUBO and other associations in the last few years to encourage institutions to report HEGIS data in a consistent manner, aberrations can occur in the data because of past reporting practices. For example, an institution may report certain types of federal aid one year and not report them the following year. These omissions can also occur relative to employee benefits and other revenue and expenditure categories. The user of HEGIS finance data should, therefore, use care in conducting historical trend analyses.

Chargebacks

In those instances in which a large university system provides services to other campuses, the finances for the campus providing the service will be overstated unless some form of chargeback system is used. Similarly, the finances for the campus receiving the service will be understated by the amount of central services used by the campus. The study group suggested that having individual campuses report the amount of central services used would greatly improve comparability of the data.

Imputation and Estimation of Institutional Data

The study group noted that data are often imputed or estimated for institutions that fail to respond to the HEGIS finance survey, and suggested that users of HEGIS finance data would find it helpful if details of this imputation process were made explicit. In particular it would be useful if NCES identified specific instances in which the data were either estimated or imputed. It was noted that the National Science Foundation (NSF) currently utilizes such a procedure and that NCES might find it productive to review the NSF procedure.

In reviewing the ways in which financial data were used with enrollment data, the group expressed concern over variations in the method by which states calculate total FTE students. It was noted, for example, that some states calculate total FTE by dividing total credit hours of instruction by 15. Other states, however, add full-time student headcount to two-thirds of part-time student headcount to arrive at total FTE. The study group, therefore, suggested that the use of noncomparable enrollment data with noncomparable financial data could compound the problems of using HEGIS data for interstate and interinstitutional comparisons.

Caveats to Aid Users of HEGIS Finance Data

From the list of problems outlined above, a set of caveats was developed to aid users of HEGIS finance data in making appropriate interinstitutional and interstate comparisons. In developing these caveats, the study group also used material contained in Higher Education Financing in the Fifty States, by Marilyn McCoy and D. Kent Halstead. Some caveats, e.g., 1, 2, 4, 6, 7, 8, and 9, relate primarily to institutional comparisons while others apply to both interinstitutional and interstate comparisons.

1. Users of HEGIS finance data should note that state payments for employee benefits do not always flow through institutional accounts. In some states these payments are handled by a separate state agency, frequently the personnel agency. In Connecticut, West Virginia, and Wyoming, for example, employee benefits and retirement contributions are budgeted centrally for all state agencies. In such cases, finances for institutions can therefore be understated. It is often useful in conducting interstate comparison of higher education finance to augment HEGIS data with financial data on the total state support of higher education.

2. In at least 13 states, tuition and fees are reappropriated by the legislature, at least in part or for one institution. If an institution uses its tuition and fees as an offset to state appropriations, these funds should be reported on the HEGIS form under tuition and fees and not under state appropriations. If this procedure is not followed, state appropriations may be overstated by the amount of the tuition and fees used to offset state appropriations.

3. Users of HEGIS finance data should be aware that institutions may receive state and federal funds for a variety of purposes that differ from institution to institution. This is true in the case of public service functions such as public health labs and indigent patient care. In some states the services are provided by state agencies while in other states they are provided by higher education institutions. As a result, comparing total institutional expenditures without considering the diverse and varied functions of institutions can result in erroneous conclusions about the financial operations of institutions.

4. Users of HEGIS finance data should be careful to distinguish between data reported for individual institutions and data reported for institutions that are part of a university system. Data for any system's institutions may not include revenues and expenditures associated with the operation of the system's central administration.

5. In building institutional comparison groups, users of HEGIS data should be aware that, while in some states there are distinct enrollment and financial data associated with a comprehensive health institution, in other states the health professional programs are part of an overall institution's financial and enrollment data and are not separable. Due to the higher cost of health programs, their inclusion with other types of institutions may cause distortions in per-student revenues and expenditures.

6. Users of HEGIS finance data should be aware that the mix of institutions included in the HEGIS survey can vary from year to year and that prior-year HEGIS data tapes are not updated to incorporate institutional corrections of the data file.

7. Varying organizational arrangements among higher education institutions can often lead to data comparability problems. Medical schools, central administration, extension and research centers, institutes, and programs, e.g., agricultural extension, often vary in their relationship to a main campus or system of campuses. Variations in the way in which the data are reported by institutions can result in comparability problems.

8. In conducting interstate comparisons of the postsecondary component of vocational-technical institutions researchers should note that some states report these data while others do not. In a recent SHEEO survey of state funding and financing practices in 29 states, slightly more than half the respondents reported current operating expenditures for postsecondary vocational-technical institutes not in the HEGIS universe. Users of HEGIS finance data for this segment of postsecondary education should therefore seek additional state and institutional data to augment HEGIS finance data.

9. Users of HEGIS finance data should be aware that student aid payments made directly to students are not currently included in the HEGIS finance data base. In at least 24 states, some form of student aid is provided and the expenditures are not reflected in institutional HEGIS reports. As a result, the amount of student aid reported for institutions in these states may be understated. Student aid is becoming increasingly viewed as an alternative to increasing appropriations to institutions by states as well as by the federal government. The amount of student aid provided to institutions is therefore an important factor in conducting interinstitutional and interstate comparisons of higher education finance.

10. Users of HEGIS finance data should be aware that, in instances where a larger campus in a university system provides services to other campuses, the finances for the campus providing these services will be overstated and those of the receiving campus will be understated unless some type of chargeback system is used.

11. Users of HEGIS finance data should be aware that data are often imputed or estimated for institutions that do not respond to the HEGIS finance survey. In addition, methods used to calculate total FTE enrollments can vary from state to state depending on the institutional definition of FTE students.

Based on the caveats above, the user of HEGIS finance data should exercise care in using such data for interinstitutional or interstate comparisons. In addition, whenever possible, HEGIS data should be used in conjunction with other state and institutional data sources.

Chapter 3

Recommendations for Dealing with Data Comparability Problems

In an effort to improve the utility of HEGIS finance data for institutional and higher education sector comparisons, the study group formulated a number of recommendations.

The recommendations outlined below are based on the study group's perceptions of the problems surrounding the use of HEGIS finance data for interinstitutional and intersector comparisons. They are intended to enhance the utility of HEGIS finance data for analytic purposes and to improve communication between NCES and data users and providers. In formulating these recommendations the study group was aware of past efforts by NCES in these areas, but concluded that the increased use of data for comparison purposes required greater attention to methods by which data are collected and disseminated. The study group has drawn attention to activities by both higher education associations, such as NACUBO, ACE, and SHEEO, and research organizations to improve the quality of the data collected, and agreed that the utility of HEGIS finance data could be significantly improved if NCES and the higher education community were to jointly implement the following recommendations.

1. Increased Participation by Institutional Representatives and Increased Use of NCES Regional Workshops

   The study group suggested that higher education associations, such as NACUBO, ACE, AIR, ECS, and AACRAO, should work with their memberships to improve the quality and timeliness of the data collected. These organizations should also assist institutions in highlighting problems associated with the collection of HEGIS finance data and in articulating concerns about the way HEGIS finance data are used.

   NCES can do much to educate HEGIS data users either through regional workshops or by supplying supplementary documentation with the data. Regional workshops sponsored by NCES should involve increased use of institutional personnel who are experienced in developing and implementing HEGIS data collection systems. This involvement could reduce the cost of the workshops to NCES and could also stimulate the exchange of information on the collection and use of HEGIS data. (This recommendation is closely linked to recommendation 5, which addresses the role of state higher education agencies.)

2. Support of the National Center for Education Statistics

   The study group noted that the services performed by NCES are valuable to higher education. Though the study group differed over the ways in which the data should be used, they were supportive of the agency's past efforts to facilitate the data collection process. The work of NCES with NACUBO, AICPA, and

NCHEMS to coordinate the definitions and the data structure used in the HEGIS survey was cited as an example of this type of activity. The study group also noted that the increased use of the data for analytical purposes warrants an increased commitment of resources to improve the quality and consistency of the data collected.

The study group, therefore, urges that ACE, NACUBO, SHEEO, and other national organizations continue their support of efforts by NCES to improve the data collection process and to enhance the quality of the data collected.

3. Periodic Review and Revision of Survey Instruments

A technical advisory group should be formed to assist NCES in revising and updating, where appropriate, the definitions contained in HEGIS survey forms. Members of the advisory group and should be drawn from institutions, state higher education boards, and representatives of higher education organizations. Other knowledgeable individuals could also be used, such as representatives of CPA firms. This group would assist NCES in the periodic evaluation and revision of all HEGIS finance survey instruments. This evaluation should be conducted on a revolving basis and should be tied to validation efforts.

4. Provision of Institutional Profiles

The quality of HEGIS finance data collected could be improved significantly if adequate feedback in the form of institutional profiles were provided to participating institutions. These profiles could be constructed by NCES using data submitted by institutions. The National Science Foundation currently uses this approach and has found it beneficial. The group suggested that institutional profiles would enable an institution to respond to and correct any discrepancies in the data. The profiles would also provide institutions with an incentive to respond to HEGIS and would do much to improve the quality and utility of the data. The study group also suggested that NCES could improve institutional feedback by providing institutional profiles to both preparers of the HEGIS forms and potential institutional users of HEGIS data, such as the chief business officer and/or director of institutional research.

5. Correction of Prior Errors in HEGIS Data Files

NCES needs to develop a procedure for correcting errors in data tapes from prior years. This procedure should include guidelines designating specific institutional representatives who are authorized to make changes to the data for their institution. These guidelines would help to preserve the integrity of the data.

6. Use of State Higher Education Agencies to Facilitate Collection of HEGIS Finance Data

In a number of states, higher education governing and coordinating boards act as a conduit for institutional submissions of HEGIS data. The study group noted that in these states the organization of State Higher Education Executive Officers (SHEEO) could do much to improve the quality of data by strengthening their editing activities and by working with institutions to encourage the timely submission of HEGIS data. The study group also suggested that the SHEEO members and institutions work together to provide feedback to NCES on the appropriateness of HEGIS survey instruments and on the procedure currently used to collect and disseminate HEGIS data. SHEEO, through the SHEEO/NCES network, currently provides input to NCES on survey forms and procedures. In addition, SHEEO has formed an Ad Hoc Task Force on the Quality and Comparability of Financial Data. Activities such as these should be encouraged, and NCES should draw on the experience of involved individuals both at the institutional and state level to improve HEGIS data collection and dissemination procedures.

7. Continuity of NCES Data Processing Procedures

The study group noted that approaches used in processing HEGIS finance data tended to vary from year to year. As a result, the EDSTAT tapes generated by NCES were inconsistent from one year to the next. This appeared to result from frequent changes in the contractors hired to process the data and in programmer assignment and turnover. The lack of consistent data was also attributed to a lack of adequate feedback from subcontractors to NCES staff.

The study group suggested that data consistency would be improved by having NCES implement a standard format for all data tapes, across both surveys and years, and by monitoring more closely the production of these data tapes. The group also suggested that data tape consistency could be improved through use of crossfile editing. NCES could benefit by drawing on the experience of NCHEMS, ACE, and other organizations in developing and implementing such procedures.

8. Establishment of a Fixed and Regular Schedule for Release of HEGIS Finance Data

Study group participants recommended the establishment of a fixed and regular schedule for release of HEGIS finance data, which would aid both researchers and other users of the data. Also suggested was a preliminary data tape that would be made available to researchers prior to the regular release of HEGIS data.

9. Provide HEGIS Finance Data Users' Manual

The study group suggested that a users' manual should be developed to aid data users in understanding HEGIS finance data collection and dissemination procedures. The manual would document existing data editing procedures and provide a historical perspective on:

(a) institutions included in the survey and how the number and types of institutions have changed from year to year;
(b) procedures for imputing and/or estimating institutional data;
(c) changes in focus of survey and survey forms; and
(d) institutional classification system used.

NCHEMS, in its Higher Education Finance Manual (HEFM) currently includes certain information, but the group recommended that NCES should construct a users' manual, which would provide greater detail and be available to all users of HEGIS data.

10. Creation of Longitudinal HEGIS Finance Data

At the present time HEGIS finance data for specific years are stored on individual data tapes. The study group suggested that the creation of a tape containing several years' data would enhance the use of the data for time-series analysis and would reduce the cost of providing multiple-year data to users. To ensure data consistency, this tape should be updated to incorporate any corrections in the data. The group noted that the American Institute for Research in the Behaviorial Sciences, ACE, and NCHEMS are currently engaged in developing such a tape and encouraged NCES to work with these organizations in exploring ways of providing and regularly updating this information for data users. The group also emphasized the importance of integrating this data tape with other HEGIS data tapes, such as those on enrollments and faculty.

11. Improvement in Communications with Data Providers and Users

The study group suggested that NCES improve its communications with providers and users of HEGIS data. Changes to HEGIS finance forms and procedures are not being communicated as effectively as necessary to institutional representatives. Institutional representatives to the study group said they have tried to improve institutional understanding of HEGIS forms and procedures through their own associations, but that NCES could contribute more to this process. To facilitate this process, the study group recommended that NCES staff work more closely with institutional and state associations. It suggested, for example, that NCES representatives continue their participation at national and regional meetings of the Association of Institutional Research and increase their involvement at regional meetings of other institutional groups. The study group also recommended that NCES publicize current uses of HEGIS finance data. For example, the cover letter distributed with the annual HEGIS forms could highlight past uses of HEGIS data.

12. Establishment of a Data Users Group to Exchange Information on Uses of HEGIS Finance Data

The study group recommended that NCES sponsor a users group to facilitate the exchange of information on uses of HEGIS finance data for research purposes. The formation of such a group would highlight technical problems in using HEGIS finance data and would do much to improve the quality of HEGIS finance data being used by researchers. The group would also provide feedback to NCES concerning data comparability problems.

In reviewing the recommendations outlined above, the reader should note that the study group concluded it would be inappropriate to advocate particular uses of HEGIS finance data. It was deemed more important to educate data users about limitations inherent in using the data for comparison purposes. Researchers should use HEGIS finance data responsibly and should inform NCES if they encounter new data comparability problems.

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"State and Institutional Comparative Analyses Using HEGIS Finance Data: A Review"

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This article examines the applicability of HEGIS finance data in conducting state and institutional comparisons. In particular, the authors of the article review a recently published study by Marilyn McCoy and D. Kent Halstead entitled Higher Education Financing in the Fifty States: Interstate Comparisons, Fiscal Year 1976 and comment on the report's use of HEGIS finance data to describe higher education revenue and expenditure patterns in the State of Washington.

Although HEGIS finance data provides educational researchers and planners with a valuable national data base, a number of problems are involved in using HEGIS finance data. Criticisms levied by state and institutional representatives at HEGIS finance data involve:

1. The lack of consistency in reporting relative to such areas as debt retirement, pension and other benefit costs, and administrative costs often borne by other state agencies.
2. Differences in the way in which various states report costs by organizational unit.
3. Inconsistency in reporting for professional schools, extension centers, and research institutes. For example, there is currently a lack of uniformity in the way in which medical schools, veterinary schools, and other professional schools are classified and reported.

4. Lack of accurate reporting in the HEGIS structure. Many institutions give the highest priority for reporting in their own program or organization classification structure, and then translate this information as best they can and with the least amount of work to HEGIS. There is no incentive or penalty to do otherwise.

Despite the data comparability problems outlined above, HEGIS data are readily accessible and, as a result, are increasingly used by educational researchers and planners.

Studies of State Financing of Higher Education

A number of major research studies on state support of higher education have been conducted in recent years. Most notable among these have been those by M. M. Chambers, Lyman Glenny, D. Kent Halstead, and Marilyn McCoy. Studies by Chambers and Glenny concentrated on state support in terms of appropriations of state tax funds for higher education. Glenny examined revenue appropriations trends and patterns during the period 1963-1975 while Chambers' studies have dealt with appropriations of state tax funds for operating expenses of higher education. Chambers has also provided an annual ranking of state support levels. Criticisms of the Chambers studies have primarily focused on their use of a single measure of state support (state appropriations). In addition, a number of individuals within higher education believe that financial support to higher education needs to be examined in terms of a number of other factors such as competing state programs, overall state and local capacity to support public programs, differing need for support, and the amount of support provided by other sources (federal, private, other) among other factors.

Several individual states have also examined Chambers' data within the context of their own state environments. The Washington State Council for Postsecondary Education, for example, annually publishes a report that highlights financial support of higher education in the State of Washington. The report contains information on combined state and local appropriations for higher education per full-time equivalent student along with data on enrollment and demographic trends for Washington and other states.

Marilyn McCoy, in State and Local Financial Support of Higher Education: A Framework for Interstate Comparisons 1973-74, attempted to focus on a number of measures of state support. Among the measures listed were: support from both state and local governments, support to both students and institutions, and state and local support of sponsored research and other sponsored programs. The data used in analyzing the state and local support to higher education institutions came from the Higher Education General Information Survey (HEGIS). Though this study provided a much broader picture of state and local support of higher education, it suffered from a number of data comparability problems caused by inconsistencies in the way the institutional data was reported to HEGIS. The study also lacked a comprehensive enough classification structure of institutions in that it was limited to only three institutional types: university, four-year and two-year. In addition, the time lag between the data used (1973-74) in the report and the issuance of the report (May 1976) limited the application of the data.

The McCoy-Halstead Report

A recently published study by Marilyn McCoy and D. Kent Halstead, entitled Higher Education Financing in the Fifty States: Interstate Comparisons, Fiscal Year 1976, provides state-by-state comparisons of a number of financial and demographic factors. The report encompasses such information as: numbers of students, state financial commitment to higher education, type and number of higher education institutions, other revenue sources to institutions, and institutional spending patterns. In addition, the study shows recent trends in the support of higher education by various sources (state, federal, tuition, etc.) and the extent to which state appropriations have kept pace with enrollment shifts and shifts in inflation. Each factor in the study has been indexed relative to the U.S. average. For example, if appropriations per public student in a state were $1,800, the index value of 88 would signify that this state spent only 88 percent as much as the average state.

The scope of the McCoy-Halstead study is more comprehensive than any study yet published. The study, however, still suffers from several limitations. There are no measures of the different content of programs among the states. Also the report is unable to highlight those states or institutions which emphasize different levels of graduate education or which have greater prevalance of more costly medical, engineering or other such programs. The authors are cognizant of these problems and in revising the format of the report for FY78 are attempting to deal with as many of these limitations as feasible using existing data.

One limitation from which the McCoy-Halstead report suffers and which can not be rectified through reformating is the quality of the data which is used in the study. Financial data used in the analysis is from HEGIS finance reports and, though it is the best national data available, its use in conducting state and institutional comparisons is limited. For example,

medical schools are organized and reported as separate campuses in some states; in others, they are integrated within a university. Other data comparability problems relate to the different state practices for debt financing and retirement system payments. In this regard, a study by John Minter (March 1979 Business Officer) found a number of variations between institutional reports of HEGIS financial data and institutional finance data that was coded and verified to AICPA-NACUBO audit standards. A major reason cited by Minter for these variations was the failure of many institutions to distribute staff benefits and College Work Study funds with salaries in appropriate functional categories. In the area of instructional expenditures, for example, Minter found that over half of the 125 institutions studied reported a misstatement of 5% or more between HEGIS and coded current fund data and almost a quarter of the institutions reported a misstatement of 15% or greater. Though the exact impact of these differences in reporting practices has yet to be determined, McCoy and Halstead have urged users of data for a particular state to contact data experts within the state at the appropriate institution.

The Importance of Utilizing Appropriate Institutional and State Comparison Groups

In addition to the data comparability problems associated with the use of HEGIS finance data, a similar problem is related to the selection of appropriate institutional comparison groups. In order to demonstrate how the composition of an institutional comparison group can significantly effect the outcome of an analysis, the authors have taken the data highlighted in the McCoy-Halstead report for the two major doctoral granting institutions in the State of Washington and contrasted it to three different comparison groups. The data used in developing these comparison groups was provided by NCHEMS and

utilized the same data and format as those used in the McCoy-Halstead report. The McCoy-Halstead study places 106 institutions in the major doctoral category which was defined as those institutions granting a minimum of 30 doctoral level degrees in three or more doctoral level program areas but which do not confer over 50 percent of their degrees in a single program area.

Before proceding with the analysis, it is important to examine the composition of higher education in the state of Washington. Table 1 highlights the number of institutions in Washington, 1976 FTE enrollment, and state and local appropriations for each institution. The data contained in this table and in tables 3 and 4 came from HEGIS surveys ("Financial Statistics of Institutions of Higher Education for Fiscal Year Ending 1976" and "Opening Fall Enrollment in Higher Education 1975").

Table 1

Composition of Higher Education in Washington State

Institution Type	Number of Institutions	FTE Enrollment 1976	State and Local Appropriations FY1976
Public Institutions			
Major Doctoral	2	46,325	$ 149,855,954
Comprehensive	3	21,211	44,923,333
General Baccalaureate	1	2,457	6,486,150
Two Year	27	78,124	94,431,798
Total Public	33	148,117	295,697,235
Independent Institutions	14	20,947	0

In examining the HEGIS finance data for Washington State, McCoy and Halstead found that the major doctoral institutions in Washington enroll 31% of public students and receive state and local funding 23% above average. Their analysis also indicated that this support was supplemented extensively by government and private grants and contracts so that total revenues were 30% above the average for similar schools.

To examine whether the composition of the comparative group used by McCoy and Halstead significantly affected the outcome of their analysis, the authors constructed three different comparison groups of major doctoral institutions. The criteria used in selecting each of these groups is outlined below and the institutions included in each group are highlighted in Table 2.

Comparison Group	Selection Criteria
1	Institutions similar in size, scope, and reputation
2	Group 1 less institutions with agricultural programs and less those which have no comprehensive health sciences programs (other than veterinary medicine)
3	Group 1 institutions with integrated health sciences programs

Table 2

Institutional Comparison Groups
Relative to Major Doctoral Institutions Within Washington State

	Group 1	Group 2	Group 3
U California - Berkeley	X	X	
U California - San Fran Med Ctr	X	X	
U California - Davis	X	X	X
U California - Irvine	X	X	X
U California - Los Angeles	X	X	X
U California - San Diego	X	X	X
U Illinois - Urbana	X	X	
U Illinois - Medical Center - Chicago	X	X	
U Indiana - Bloomington	X	X	
Purdue - Main Campus	X		
U Iowa	X	X	X
Iowa State - U Sci & Tech	X		
U Kentucky - Main Campus	X	X	X
U Michigan - Ann Arbor	X	X	X
Michigan State Univ	X		
U Minnesota - Mpls/St. Paul	X	X	X
U Minnesota - Mayo Grad Sch Med	X	X	
U Missouri - Columbia	X	X	X
U North Carolina - Chapel Hill	X	X	X
Ohio State - Main Campus	X	X	X
U Oregon - Main Campus	X	X	
U Oregon - Health Science Center	X	X	
Oregon State Univ	X		
U Texas - Austin	X	X	
U Texas - Hlth Sci Ctr Dallas	X	X	
U Washington	X	X	X
Washington State Univ	X		
U Wisconsin - Madison	X	X	X

Institutional revenue data for each of the three comparisons groups was assembled and a new index based on institutional revenues per FTE student was constructed for each group. The data used in this analysis came from HEGIS and are the same as those used by McCoy and Halstead. Table 3 shows the placement of the University of Washington (UW) and Washington State University (WSU) relative to institutions in each comparison group and the institutions in the McCoy-Halstead major doctoral group. (Note the comparison of WSU with groups 2 and 3 is not appropriate because of its organizational structure: WSU has an agricultural program and does not have an integrated health sciences program.)

Table 3

Institutional Comparisons of Revenues Per Student for Major Doctoral Institutions in Washington State

(Institutional Revenues per FTE Student)

Comparison Group	State and Local Appropriations	Tuition and Fees	Government Contracts	Private Support	Other	Total
UW and WSU revenues per FTE student as reported in McCoy-Halstead	$3,235	$ 534	$2,133	$ 319	$ 421	$6,642
McCoy-Halstead index for UW & WSU relative to U.S. average=100%	123%	65%	215%	123%	100%	130%
Univ of Wash	$3,182	$ 586	$2,725	$ 350	$ 393	$7,236
UW index relative to Group 1 institutions	96%	68%	154%	84%	67%	104%
Wash State Univ	$3,338	$ 432	$ 965	$ 258	$ 475	$5,468
WSU index relative to Group 1 institutions	100%	50%	55%	62%	81%	79%
Univ Wash index relative to Group 2 institutions	91%	68%	140%	79%	63%	98%
Univ Wash index relative to Group 3 institutions	93%	64%	139%	80%	60%	98%

The impact of different institutional classification groups on comparative and index data can be readily seen in Table 3. As illustrated in Table 3, the use of any one of the three comparison groups significantly alters the ranking of institutions relative to the McCoy-Halstead index. State and local appropriations per FTE student for the University of Washington drops from 123% of the U.S. average to from 91% to 96%. Tuition and fee revenues per FTE student remain relatively stable. This finding appears to indicate that there is not much variance in dispersion of tuition and fee levels given a group of major doctoral institutions. Private support, which includes private gifts and grants from donors, drops from 123% of the U.S. average to from 79% to 84%. Government contracts per FTE student for the University of Washington remain above the U.S. average, but the size of the difference is reduced substantially. This finding appears to support the contention that these three groups represent a better comparison group than the major doctoral grouping of McCoy-Halstead in that a higher level of government contracts characterizes the smaller samples and that this characteristic mirrors more closely the revenue mix at the University of Washington.

In examining Table 3 and in reviewing the data contained in the McCoy-Halstead report, it is important to note that the use of an FTE student divisor in the case of government contracts, private support, and other income is not valid because financial support in these categories is not related to FTE student volume, either directly or indirectly. Thus, extreme caution must be observed in using this data for any comparative or absolute measurement purpose; this introduces further complexities into an already difficult comparative analysis problem.

It is apparent from the above analysis that the choice of a comparative group is critical to any study of state higher education financing, and can have significant implications in the analysis of funding and expenditure

patterns of complex major research institutions. This is particularly important in the case of institutions with health sciences programs. These types of programs are generally characterized by higher program costs and a complex variety of funding sources. In addition, health sciences programs usually receive substantial grant and contract support. The unique financial and program characteristics associated with health science programs would appear to preclude their inclusion in the broad category of major doctoral institutions. It is appropriate, therefore, to use a more refined classification system that allows more meaningful comparisons. If national comparative data is to be published continually in the future by institution type, (e.g., university, four-year, two-year) a new classification of institutions is urgently needed for complex doctoral degree granting institutions and possibly for other institution types which may exhibit certain peculiar characteristics which inhibit comparative analysis.

As indicated in Table 3, the composition of a comparison group can significantly alter the relationship between institutions in terms of institutional revenues per FTE student. The selection of an appropriate comparison group can also affect institutional relationships relative to expenditures per FTE student by program and institutional type. Table 4 highlights the level of institutional expenditures per FTE student for the University of Washington and Washington State University as reported by McCoy-Halstead. The index value assigned to these institutions by McCoy and Halstead is then contrasted to index values of each of these institutions relative to the three new institutional comparison groups.

Table 4

Institutional Comparisons of Expenditures Per Student
for Major Doctoral Institutions in Washington State

(Expenditures per FTE Student)

Comparison Group	Instruction	Research	Public Service	Other	Total
UW and WSU expenditures per student as reported in McCoy-Halstead	$2,493	$1,737	$ 237	$1,971	$6,437
McCoy-Halstead index for UW and WSU relative to U.S. average= 100%	128%	196%	61%	114%	130%
1) Univ of Wash	2,910	1,972	89	2,035	7,006
Univ of Wash index relative to Group 1 institutions	117%	130%	18%	94%	105%
1) Wash State Univ	1,668	1,275	528	1,843	5,314
Wash State Univ index relative to Group 1 institutions	67%	84%	105%	85%	80%
2) Univ of Wash index relative to Group 2 institutions	111%	123%	19%	87%	100%
3) Univ of Wash index relative to Group 3 institutions	110%	123%	17%	91%	100%

As in the case of institutional revenues per student, a similar pattern appears in terms of expenditures per FTE student. The McCoy-Halstead index figures fall off substantially when the comparison group is altered to improve program comparability. It should be noted that the division by FTE students for those expenditure categories other than instruction is not valid and, even in the case of instruction, comparability suffers from variations in program mix by discipline area and level and type of instruction (credit, noncredit, extension, other).

Recommendations for Future Comparative Studies

Information regarding state and federal financial support for higher education has and will continue to be of considerable interest to both the federal government and state governments. The publication of state by state comparisons of financial and related data, while troublesome in many respects, cannot be expected to abate but rather to increase in the years ahead. As the flow of information increases, it is imperative that both users and providers of HEGIS data make a concerted effort to improve the utility of the data.

Data for HEGIS is provided by institutions of higher education. As providers of the data, institutions play a significant role in determining the quality of the data collected. Institutions are also affected by national comparative studies which are often used by state legislatures in setting state higher education policy. Institutional representatives, therefore, must help to identify appropriate definitions, data collection instruments, audit procedures, comparative analysis guidelines, and publication procedures. They also need to make a concerted effort to improve the accuracy, timeliness, and interpretation of information used for such comparisons.

The federal government and its education data collection agency, the National Center for Education Statistics (NCES), must also be responsive to the needs of higher education institutions. It is important that incentives be provided to encourage the submission of accurate data. One of the most important incentives would be for NCES to provide periodic feedback to institutions and state coordinating agencies as to the accuracy of the data. The McCoy-Halstead report is an example of such a feedback mechanism. This report, however, suffers from the fact that there is a significant lag between the time the data is collected by NCES and the time the report is released. Another incentive which could improve institutional responses to HEGIS might be the use of less detailed classification elements in some sections of the HEGIS forms. NCES should also review its data collection instruments to insure that meaningful data is being collected and that these data are appropriate for institutional and state comparative analysis.

Education researchers and other users of HEGIS finance data have a responsibility to ensure that they use HEGIS data in a meaningful and appropriate manner. In this regard, they must be aware of the comparability problems associated with the data and of the different organizational structures present in each state. Researchers using HEGIS data from particular states should contact data experts within the state at the appropriate institutions in order to obtain clarification on apparent aberrations in the data. For example, significant fluctuations in expenditure or revenue patterns should be investigated thoroughly and the HEGIS data verified by contacting representatives at the institutions and states affected. Also, in constructing comparison groups, data users should insure that institutions included within a group are indeed comparable.

Comparative analyses of the kind presented in the McCoy-Halstead report will continue. Furthermore, these types of analyses can be expected to be extended and improved upon because they are in demand. Given this scenario, the higher education community must provide specific suggestions for improvements and be prepared to back them up. Some suggestions for improvement are listed below for consideration.

a) Individual institution attention to the proper completion of HEGIS data collection forms, particularly as to definitions and accuracy.

b) Development of recommendations by higher education researchers and other users of HEGIS finance data as to the appropriate relationships among data elements; for example, it is improper to compare research expenditures on a per student basis.

c) Development by the users of HEGIS data of appropriate peer comparison groups. It should be noted that the establishment of appropriate comparison groups is largely determined by the type of comparison being made. For example, a detailed analysis of revenue and expenditure patterns at campuses with integrated health science programs would call for a thorough analysis of program similarities among institutions to be included in the comparison group.

d) The development of proper caveats to accompany any comparative analysis of this kind. These caveats would highlight data comparability problems and would be developed jointly by both users and providers of HEGIS finance data. They would be desimated by NCES to all users of HEGIS finance data.

"The Utility of HEGIS Finance Data:
A University System Perspective"

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Background. During the past decade, increased emphasis has been given to the development of data definition and collection processes which can be used for comparative purposes by the postsecondary education community. These efforts have ranged from data exchanges by individual departments to aggregate levels of comparison such as state levels of support done by M. M. Chambers, the Education Commission of The States, and others. In most instances these studies have focused on a limited definition or aspect of postsecondary education. For example, M. M. Chambers has attempted to report only state appropriations for postsecondary education while the AAU/data exchange group have been working on inter-institutional exchange of detailed fiscal, personnel, and workload data at the departmental level. Most of the studies and data exchanges have relied on the data collection efforts of the participants involved in the study. Only recently has more extensive use been made of the Higher Education General Information Survey (HEGIS) data collected by the National Center for Educational Statistics (NCES). The most recent and comprehensive study using HEGIS data is the Halstead and McCoy study "Higher Education Financing in The Fifty States." This study made extensive use of the HEGIS data and underlined many of the problems inherent in the data base.

Limitations of the HEGIS data base. If the HEGIS data are to be used by the postsecondary education community for comparative and planning purposes, a thorough understanding of the limitations of the data is required to guarantee that conclusions and generalizations drawn from the data are correct. Although the HEGIS financial data may be useful for state planning in some cases, in Wisconsin the University of Wisconsin System budget and financial reports more accurately reflect the financial statistics for the UW System and hence are used for financial planning. The HEGIS financial survey does not include the detail necessary to assure comparability of reporting or disaggregate profiling of

institutional uniqueness. A discussion of some of the problems of data definition and comparability faced by the University of Wisconsin System in using HEGIS data and problems observed in our analysis of national studies on higher education finance follows:

1. Scope of responses. Since response to the HEGIS financial survey is voluntary, special attention must be given to the extent of non-responses and from which institution or segments of postsecondary education responses were not provided. For example, it must be determined whether or not data are available from all segments of the adult and vocational education sector. The structure for providing adult and technical education varies significantly among the states. Our review in Wisconsin suggests that in some years the response may be less than complete with non-responses from significant segments of the post-secondary educational community. It is not clear that there is a coordinative effort in each state to assist with the preparation and submission of the surveys.

2. Currency of data: The rapid increases in inflation combined with changing fiscal support by state governments dictate a need for current information if it is to useful for planning purposes. Although considerable improvement has been made in the publication schedule for the HEGIS data, there remains a problem of data becoming available only after it is outdated. Data which is already two years old loses much of its value to the University of Wisconsin System and it is to be assumed that this is equally true for other institutions.

3. Institutional or System Uniqueness. There is great diversity among institutions and systems of higher education in the U.S. The diversity exists both within the structure of the institutions and state systems and within the structure of state government appropriations. In fact, there is significant diversity among UW-System institutions and caution must be used in making comparisons within the System. Any survey used for profiling the financial support from a variety of sources must be designed to accommodate and reference differences.

Presently the HEGIS survey is not designed and coordinated in such a way to provide the user with the detail of differences which exist among institutions and across the states. University of Wisconsin System staff conducted a telephone survey of the public Big Ten universities to determine the extent of differences in the HEGIS financial surveys as they were submitted to NCES. Following is a brief discussion of the questions asked in the survey and the responses from the Big Ten universities.

Question 1. Do current funds include mandatory provisions for debt service on academic facilities?

In many states the debt service is handled/processed through a separate state agency with little or no debt service funds on academic facilities being appropriated directly to the university. In some cases debt service is appropriated directly to the university and hence must be reported on the HEGIS survey as a mandatory transfer. As reported by NCES, the debt service on academic facilities included in institutional budgets ranged from $14,700,000 in one institution to no debt service reported by others for fiscal year 1978. Differences in state approaches to appropriating debt service of the magnitude above suggest that extreme caution would be required in comparing total state appropriations among the institutions surveyed.

Question 2. How are fee remissions treated on HEGIS submissions?

As is the case in reporting debt service, there is wide disparity in the handling of fee remissions among the Big Ten universities. The differences ranged from one university with no fee remissions to institutions which handle them as a reduction in fee receipts. It would appear that differences in reporting fee remissions may have a significant impact on current fund revenues reported by the higher education community.

Question 3. Does your state fund a state public health laboratory through appropriations to the university?

Only two of the seven states reported that state public health laboratories were funded through appropriations to the university. In one state, the appropriation for the laboratory was approximately $2,800,000.

Question 4. Is a cooperative extension service included in the organizational structure of the university?

Cooperative extension is included in only four of the nine public Big Ten public universities. This finding is not unexpected since many of the Midwestern states have both a "state university" and a "land-grant university." However, in Wisconsin the extension function is organized as a separate and autonomous institution with program responsibilities relating to all public universities in the state. Thus, either a procedure for appropriately allocating these funds to all universities of the system or the extension function must be identified in the HEGIS data base as a separate institution.

Question 5. Is a medical school operation included in the organizational structure of the institution?

The universities reported that medical school data were included in the HEGIS data of all universities where medical schools exist. However, in one state the medical school is a separate organization, hence not included in the HEGIS data reported for the Big Ten university in that state. One other Big Ten university has no medical school. Differences such as these are commonplace, not the exception, in public universities throughout the country.

Question 6. Is there a specific indigent care state appropriation to the teaching hospitals, if such exists?

It was found that indigent care appropriations were not normally separately identified at universities with teaching hospitals. One state was an exception.

Question 7. Does the state have a separate coordinating council or board governing higher education?

Only Michigan has no higher education coordinating body. All other states, except Wisconsin, have some form of coordinating function, yet the funding for this coordination is not reported through the HEGIS survey. Wisconsin is the only state among the Big Ten with a System of higher education which includes all public collegiate institutions. Since the state is organized as a System, the funding for the system administration is reported on the HEGIS survey. Thus, the cost of the coordinating function is included in some states while not included in others.

Question 8. Are you aware of any other disparities in reporting methodology, and if so, what are they?

In response to this question, most respondents stated that they were reporting in accordance with CUBA 1974 principles. We would conclude from this response that among the institutions surveyed, reporting of HEGIS financial data is done conscientiously within the limitations of the survey form.

Although the brief survey conducted by staff of the University of Wisconsin System was limited to the questions discussed above, other areas of concern for data comparability must also be recognized. One of these is the manner of reporting research facilities which are federally funded but at the same time serve as a major resource to graduate education and research. In some instances these facilities are included completely within the institution budget while in other instances the facilities are separately organized and not reported to NCES.

The area in which greatest problems of comparability exist is in the reporting of student financial aids. State programing for student financial aid is sufficiently diverse that uniform reporting becomes extraordinarily difficult. This is, in all probability, an area in which substantial new work must be done before confidence in the data is justified. The conclusion to be drawn from the survey information is that in many areas there is little or no basis for

data comparability between institutions. Inconsistent data reporting in any of the areas discussed above can cause significant skewing of information for comparisons among institutions. However, the cumulative effect of inconsistent data in several of the categories is to make any form of inter-institutional comparisons highly questionable.

4. Using HEGIS financial data for planning in the State University System. As stated earlier, the HEGIS financial survey does not contain sufficient detail to provide the data required for the internal planning and management of a university system. Nor should the survey be designed to serve these purposes. Rather, a national survey is useful to the extent that it can collect data from and make results available to a broad segment of the national postsecondary educational community. In some instances the HEGIS data might provide useful data on a statewide basis. However, given the diversity among the states and the differing needs for management and planning information, the state structure should assume responsibility for definition of data unique to a particular state. Within the University of Wisconsin System, data systems designed to meet the information requirements within the System are well developed.

What then are the needs for HEGIS data within a state university system? There are several, some of which can be met through the current survey, while others will require some modifications or restructuring of the current survey instrument. National surveys are most useful for those situations requiring national data. The need may be for either comparative data on an aggregate basis or for rather specific data about particular types of institutions.

During a UW System study on the scope of higher education in Wisconsin, it was useful to analyze the percent of total expenditures of the instruction, academic support, student services, and institutional support among a group of institutions nationally. The HEGIS data tapes provide a readily available source for this analysis. It was possible to select institutions of comparable

mission and size and compare expenditures on a percentage basis. For the purposes of this study, problems with the HEGIS data base discussed earlier were relatively unimportant. What was needed was relatively accurate data for a given program at specific universities. Even variances in the reporting of such items as tuition remissions has little effect on the percentage of expenditures for each of the programs. In this example, the HEGIS data was a useful information source.

The UW System has also used the data tape to do more specific analyses including comparisons of expenditures per student for a selected group of peer institutions. In these analyses it is necessary to merge the data from the financial file with data from the student file. Again, discreet elements from the financial survey were selected. For instance, the expenditure per student for instruction was determined using the reported expenditures for instruction and student statistics for full-time and part-time as reported to NCES. FTE students were weighted by student level (undergraduate and graduate) to reflect possible differences in the programs of the peer institutions. Such analyses can be reliable and useful if the data reported by the institutions are valid. However, there exists a greater possibility of non-comparability of data in studies of this type than the percentage of expenditures study discussed above. Here variances in institutional reporting practices such as the handling of tuition remissions effect the results of the study.

There is an increasing interest, both on the part of institutions and state governments for more comparative data about postsecondary education as a total effort. The Halstead and McCoy study is the most ambitious effort to provide these data. However, it is this type of study that is of greatest interest to state decision makers and for which the present HEGIS survey is least suitable. Although the University of Wisconsin System has had a keen interest in developing such analyses over the past several years, we have found the HEGIS

financial data to be significantly flawed as a data source. The diverse reporting procedures, the diversity of organizational structure, and the significant level of non-response contribute to problems of non-comparability of data among the states of significant magnitude as to invalidate studies at this level of aggregation. We have found in certain years reporting errors of approximately thirty percent in the dollars appropriated to all of postsecondary education. More recent surveys may have succeeded in collecting more complete and accurate data. Yet, until such problems have been resolved confidence will remain low in the HEGIS data as a source for comparative studies of the total appropriations for postsecondary education among the states. State systems of higher education are vitally interested in comparisons of the level of state support and in trends in the level of this support. The HEGIS data base could be the ideal source for such studies. What remains, is to devise better ways of collecting financial data and making them available in a more timely way.

5. Necessary modifications and refinements. Crucial to the design of any information system is a detailed analysis of the purposes and decision processes to be served by the information collected. The HEGIS data may now be used in studies of a type not intended by the original designers of the form. To the extent this is the case, a re-evaluation of intended purposes of the HEGIS survey becomes the necessary first step in improving the data base. Since the Halstead and McCoy study is the most comprehensive analysis of financing higher education that has been undertaken relying almost exclusively on the HEGIS survey, a careful evaluation of the limitations of the HEGIS data base apparent in this study should be undertaken. A study of the type undertaken by Halstead and McCoy has great implications for decisions about financing postsecondary education in the country and yet it can only be accomplished by access to data collected at the national level.

Some suggested modifications and refinements important to higher education are identified in the Forbes Magazine study published in 1974, the Halstead and McCoy study, analyses done by the State of Washington Commission for Postsecondary Education, analyses undertaken by the System Administration of the University of Wisconsin System, and others are discussed below. This is not intended to be an exhaustive statement but to offer examples of the types of modifications and refinements that would make the survey more useful to the postsecondary education community, especially to state systems of higher education.

Timeliness. Anyone using the HEGIS financial data, either through published studies or by direct access to the tapes must contend with data that are not current. The lag between submission of the survey by the institutions and release of the data by NCES has been reduced somewhat in recent years. However, if the data are to be optimally useful, the lag time must be further reduced.

More complete response. NCES should develop procedures to improve the response rate. It is particularly important that methods for communicating with and getting responses from segments of the postsecondary education community such as technical institutes and other specialized institutions that may not normally be included in the Higher Education Directory.

Revise the survey form. Careful consideration should be given to ways in which the survey form can be expanded without placing an unreasonable burden on the respondents. It is especially important that the form be revised to more accurately profile the diversity of postsecondary structures existing among the states. For example, consideration should be given to specific elements in the form for reporting such items as debt service, indigent care funding, statewide governing and coordinating boards, unique service functions which may be funded through the higher education budgets such as public health laboratories, tuition remissions, staff fringe benefits, health science centers, cooperative extension, and other functions which are handled in diverse ways among the states. An

expansion of the form increases the cost, yet without this greater delineation of the unique aspects of institutions of higher education nationally, attempts to use the data for comparative purposes will continue to be seriously flawed.

Instituitonal classifications. The present method for classifying institutions needs re-evaluation and the development of more definitive criteria. One of the most useful purposes served by the financial and other HEGIS survey tapes is the ability to draw samples of "similar institutions" for comparative purposes. The University of Wisconsin System has found the HEGIS survey of employees in higher education a most valuable source of data for salary analysis. However, we have had to develop more definitive criteria for the selection of peer institutions than is available in the NCES data base. Further, the present HEGIS classification system used does not accurately classify the UW-System institutions relative to each other.

Arbitrary modifications of data by NCES contractors. The University of Wisconsin System has experienced difficulty with the arbitrary way in which NCES contractors have modified the survey forms submitted by the University System. For example, at times the total expenditures for System Administration and University Extension have been allocated to the University of Wisconsin-Madison rather than prorated among the universities of the system. In those cases when prorations have been made, defensible criteria were not employed.

Better documentation. As a user of the data tapes, the University of Wisconsin System has found the documentation provided to be wholly inadequate. Not only is it incomplete but technical changes occur from year to year which seriously complicated access to the data.

The above stated suggestions are not intended to be all inclusive but rather indicative of potential modifications and refinements which would provide greater data integrity from the point of view of the University of Wisconsin System as a user of the HEGIS data. University of Wisconsin System Administration completes or reviews the surveys before transmission to NCES. This procedure

assures uniformity of response among the institutions of the System. We must work toward uniform reporting within each state and among the states if the margins of error in the HEGIS financial data are to be reduced to allow accurate, detailed studies of comparative financial statistics of the postsecondary education community among and within the fifty states.

"The Utility of HEGIS Finance Data:
A State Board Perspective"

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The Maryland State Board for Higher Education (SBHE) collects the HEGIS finance data from all institutions of higher education in Maryland. This is the only financial data collected annually by the SBHE from the Community Colleges and Independent Institutions in Maryland. The SBHE uses the HEGIS finance data primarily for annual comparisons among Maryland institutions and between Maryland institutions and comparable institutions in other states and for comparisons of trends over several years.

The major problem inherent in using the HEGIS finance data for comparative purposes is the lack of consistency on the part of institutions in their interpretation of the data required on each line. Much of this problem is attributable to the fact that the definitions provided with the form are often not detailed enough to provide the guidance necessary to the institutions; too much is left open to institutional judgement. This problem is more accute for institutions which do not use the NACUBO accounting framework; institutions in this situation must crosswalk their accounting data to the HEGIS framework. Institutions which must crosswalk a substantial amount of information have great difficulty in accomplishing this. A second problem encountered by some institutions is that they do not receive all of the funds they are expected to report and frequently do not know the dollar value of these funds. In Maryland this is the situation among the public institutions which do not receive funds for employees' fringe benefits. Many institutions opted to leave these funds out of their report while other institutions attempt to estimate them. These are just two of the problems which have come to the SBHE's attention in using the Maryland data for intra-State comparisons. The problems of consistency become more acute when inter-state comparisons are made.

Given that in Maryland the HEGIS finance information provides the only financial data received from two segments of higher education in the State and given that the HEGIS finance form provides the only finance information in a comparable format for all higher education institutions in the State, the SBHE decided it was necessary to improve the consistency of the data reported on this form by Maryland

institutions. NCHEMS served as a catalyst for this undertaking with their HEFM project. Maryland participated as a pilot State in the HEFM project. The SBHE convened a task force composed of representatives from all the segments of higher education in Maryland, together with representatives from NCES, to improve the reporting procedures on the HEGIS finance form. The goal of the task force was to get comparable information from all institutions in Maryland using nationally recognized definitions as much as possible. The result of the task force's work was a set of supplemental instructions to be used in completing parts A and B of the finance form. In order to delineate the problems which the task force resolved, I will discuss the major items included in the supplemental instructions.

1. *Part A, Line 20, total current funds revenues, and Part B, line 19, total current funds expenditures and mandatory transfers, do not have to balance.*

We found that many institutions believed that revenues and expenditures had to balance or at least should balance; thus the schools would adjust their figures to achieve this balance. This balancing of the numbers affected the validity of the line item detail as well as the status of the current fund budget.

2. *Those fringe benefits paid by the State Department of Personnel for the public institutions should be included in the data reported. The fringe benefit costs should be allocated to the appropriate expenditure categories in Part B which correspond to the personnel in each activity. The State revenue to pay the fringe benefits should be reported in Part A on line 3, State appropriation. The State Board for Higher Education will provide the State allocations of fringe benefits in the aggregate for each public institution.*

At the public four-year institutions and the community colleges in Maryland, social security and State retirement benefits are included in the budget of the Department of Personnel. In addition, the State's share of all health insurance for the public four-year institutions is included in the Department of Personnel's budget. Prior to the convening of the task force, none of these funds were reported by the institutions since they never flow through the institution benefits. The fringe benefits paid by the State on behalf of higher education employees will amount to approximately $30 million in FY 1981 which is ten percent of the General Fund appropriation. The Department of Personnel in Maryland does not directly attribute these funds to any institution; the SBHE estimates for the institutions the fringe benefit payment based on the total salary dollars supported by State funds. The exclusion of the dollars for fringe benefits skewed cost comparisons between the public institutions and the independent institutions in Maryland. In addition, the data used for Maryland in all national studies prior to FY 1979 excluded the State's fringe benefit contribution and thus underestimated the total State contribution to higher education by a substantial amount. This was one of the more serious reporting problems which we found and one that has serious implications for inter-State comparisons.

3. *The State Colleges and Universities and the University of Maryland should adopt a mechanism for allocating the costs of their governing boards and central administrative expenses to each of their institutions or campuses. These costs should be included in Part B on line 7, institutional support and in Part A on line 3, State appropriation.*

In Maryland, two of the segments have central governing boards which receive substantial appropriations for institutional activities as well as for the overall administration of the system. For example, all computer expenses for the State Colleges are included in their Board's budget and all TIAA CREF optional retirement contributions

are budgeted to the Central Administration of the University of Maryland. Lack of inclusion of these funds in institutional budgets leads to an underestimate of annual operating costs. The task force concluded that for valid institutional comparisons among Maryland institutions all administrative costs attributable to a segment but not included in institutional budgets should be allocated among the institutions. The rationale for this was that the governing boards relieved the institutions of certain administrative expenses which institutions not having central governing boards must provide.

4. *Institutions having programs which do not correspond to the HEGIS financial categories should either place these programs in the most applicable HEGIS category; or if the program spans many categories, it should be prorated across the categories.*

The public four-year institutions in Maryland have an accounting system which is substantially different from the HEGIS framework. The budget programs do not correspond to the HEGIS expenditure categories in several areas. For example, many institutions have a budget program called Desegregation which includes functions primarily attributable to instruction, administration and student services. The schools were instructed to prorate their Desegregation expenditures across the relevant HEGIS expenditure categories. Prior to the Task Force's instructions, institutions were arbitrarily choosing a category in which to place these expenditures.

The public four-year institutions do not have a budget program titled academic support. These expenditures are divided between instruction and institutional support. The schools were instructed to fill in their library expenditures and attribute whatever other academic support costs they could identify.

The public four-year institutions have a budget program entitled "Public Safety" which primarily includes security personnel. Several other institutions had budget programs entitled "Campus Security." A decision was made to include all expenditures for campus security and public safety in the HEGIS category Institutional Support.

The University of Maryland has a budget program entitled "Dedicated Funds" which primarily includes restricted research funds. The University agreed to allocate these funds to the appropriate expenditure categories in Part B.

5. *Part B, line 6, student services should not include student financial aid funds.*

   Part B, lines 9 and 10, scholarships and fellowships, should include remission of tuition and fees to students. State institutions should include "other race grants" on line 10.

   BEOGs should not be included in either Part A or B.

   College Work Study money should be included in Part B in the program in which the services were rendered.

Many institutions in Maryland had been including financial aid funds in the Student Services category since these funds were included in their corresponding budget program. All institutions were instructed to exclude these funds from Part B, line 6 and include them in lines 9 and 10 as appropriate. In addition, several of the public four-year institutions had been including BEOG awards on both the revenue and expenditure side since they were included in their State budget in this fashion. All institutions were instructed to exclude the BEOG funds from the form.

Some institutions were including College Work Study money on the Student Services line; others were including it among scholarships and fellowships, still others were reporting it in the expenditure function in which the services were

rendered. An agreement was reached that all institutions would include the expenditures in the program in which the student actually worked, i.e., instruction, library, etc.

A decision was made to include remission of tuition and fees on line 9 of Part B and on line 1 of Part A.

6. *Part B, line 8, operation and maintenance of plant, should not include the support for auxiliary operations. If your institution does detailed cost accounting of plant, your allocation of plant costs to auxiliary enterprises should be based on that data. If the data for cost accounting is not readily available, the following formula should be used for allocating plant costs to auxiliary enterprises. The plant costs attributable to auxiliary enterprises should equal:*
(# sq. ft. in auxil. ent. ÷ total sq. ft.) x total plant cost.
Part B, line 14, auxiliary enterprises, should include the expenditures for the operation and maintenance of the auxiliary enterprise plant. Auxiliary enterprises are defined as essentially self-supporting operations which exist to furnish a service to students, faculty or staff and which charge a fee directly related to the service. Thus dormitories, cafeterias and intercollegiate athletics usually should be included.

Many institutions included the maintenance and fuel costs attributable to auxiliary enterprises on line 8 of Part B. The institutions were instructed to allocate all relevant costs to auxiliary enterprises using either their own cost data or the above formula.

Several questions were raised by the task force concerning the appropriate items to include as Government Appropriations and Government Contracts and Grants. The Task force came to the following conclusion:

7. *Part A, lines 2, 3 and 4, government appropriations should include recovery of indirect costs. Public institutions should include the State contribution for fringe benefits on line 3 in addition to their direct General Fund appropriation. The State Universities and Colleges and the University of Maryland should include the allocated appropriation for their Boards and central administrative expenses in line 3. The Community Colleges and Independent Institutions should include the formula-funded aid which they receive from the State on line 3. All institutions should include their match for Federal student aid funds in line 3 or 4 unless the matching funds are specifically appropriated for that purpose.*

Part A, lines 5 through 10, government grants and contracts, should include all student aid money except BEOGs and Federal funds for NDSL. College Work Study should be included in line 6 and State other race grants in line 8. In addition, all government sponsored research and other government sponsored programs should be included in the appropriate line. Dedicated funds at most institutions should be included here or on lines 11 and 12, private gifts, grants and contracts.

Part A, line 15, sales and services of educational activities, should not include revenues for services to students; these revenues should be included in Part A, line 16, sales and services of auxiliary enterprises.

Part A, line 18, other sources, should include the revenue from independent operations other than federally sponsored research and development centers, for example payments to the institution for use at a summer soccer or football camp should be included here in addition to the other sources of revenue cited in the instructions.

Part A, line 19, independent operations, should include only the revenue from major federally funded research and development centers.

This rather lengthy discussion of some of the problems encountered in Maryland and some of the solutions we have designed is meant to illustrate the complexity of data comparability problems. Having found all of these inconsistencies within Maryland, we have become quite skeptical about comparing cost data with other states.

We use the HEGIS data for three types of comparisons: cost and revenue per student, percent of total expenditure or revenue attributable to a certain item and percent changes in the data over a period of several years. We have used this data for comparative purposes among the Maryland institutions. In large part we have used these comparisions to highlight institutions which differ significantly from the average. These outlyers then frequently trigger further, more in-depth, SBHE staff analysis as well as analysis by the respective Maryland institutions.

With a certain amount of reservation, we have made comparisons between Maryland Institutions and similar institutions in other states in order to aid us in identifying peer institutions. A comparative analysis of expenditures and revenues per FTES, which is one of the most useful indices, presents further problems because we have found that students are not reported in a similar fashion on the HEGIS enrollment form by institutions in other states.

A specific example of a recent use of HEGIS data concerned the Peabody Conservatory of Music. The Peabody requested a substantial amount of aid from the State for an extended period of time. The SBHE analyzed their HEGIS finance form as well as other HEGIS data and compared it with the HEGIS data from other conservatories in the country which provided to us by NCES. Our analysis indicated that Peabody's financial condition by comparison with other conservatories was not caused by spending patterns significantly different from other conservatories but

by lack of an adequate endowment. This led the SBHE to endorse Peabody's request for State aid and resulted in a legislative appropriation of $900,000 for Peabody.

I believe that it is vital to be able to make financial comparisons among institutions. These comparisons are used for a myriad of purposes not least of which is to convince Governors and Legislatures that the funding level for the institutions in your state is inadequate. The experience we have had in Maryland using comparative information to make this point has been relatively unsuccessul primarily because the people we are trying to convince are well aware of the data comparability problems which exist.

The SBHE would like to be able to use the HEGIS data from all states with a high degree of confidence that the information is comparable. We believe we have made great strides in achieving this objective for the HEGIS finance form among Maryland institutions. In order for this to be true across all institutions in the country, NCES would have to invest the resources to work with each State in a process similar to that undertaken by Maryland to ensure that areas of uncertainty are resolved in a consistent manner. More detailed instructions could help alleviate some of the problems, but many institutions have somewhat unique accounting systems which require them to make their own judgements on where to classify certain revenues and expenditures. It is unlikely that any one set of instructions will clarify all of the complex and detailed questions which institutions have. In addition, certain institutions would likely choose not to comply with certain specific instructions if compliance were to require an inordinate amount of time. I believe it is unrealistic to expect that we will ever attain comparability of each item on the HEGIS finance form. Therefore, I think it is incumbent upon us to decide which issues are most important and concentrate on resolving them.

From my perspective, as a first step we should concentrate on ensuring that total revenues and expenditures are comparable so that comparisons in the aggregate can be confidently made among institutions.

"The Utility of HEGIS Finance Data: A Researcher's Perspective"

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Introduction

The financial data collected by the National Center for Education Statistics (NCES) through its Higher Education General Information Surveys (HEGIS) represent the only ongoing source of financial information about all higher education institutions in the U.S. Given the primacy of this source of financial data, efforts to improve its utility can be expected to have broad and major benefit. As a background to efforts for improvement, this paper examines (a) the factors that affect the utility of this data set, (b) the process associated with the collection and use of that data, (c) the roles and responsibilities of various parties to that process, focusing in particular on those of researchers, and finally (d) possible steps for the future to improve the usefulness of these data. While this discussion is cast in broad rather than specific terms, it was felt that such a background would provide a much needed context for the subsequent examination of specific and detailed recommendations.

Utility of HEGIS Finance Data

It is important to review what factors affect the utility of any data set, since improvements in utility are dependent on these conditions. While the author proposes her own set of factors and outlines specific steps to improve these factors, this list is only proposed as a starting point for further input and development. It should also be noted that while these factors have been identified specifically in the context of HEGIS finance data, they are in most cases generalizable to other data collection and use efforts. The following factors are identified as affecting the utility of HEGIS finance data:

- quality of the data
- relevance of the data for decisionmaking
- accessibility of the data
- timeliness of the data
- cost-effectiveness of the data

Each of these dimensions is discussed below.

- *Quality of the data in Reflecting the Financial Realities of Higher Education Institutions*

The purpose of gathering data in this arena is to provide empirical reflections of the status of institutional finances, depicting who provides what funds, how they are used, and what assets are accumulated. Yet even at their best, such data are only an abstraction of reality and thus never as good as the reality itself. This recognition is important to bear in mind as one seeks to both collect and use data depicting the finances of higher education. As such, we must not pretend that these data, despite their empirical concreteness, are more than they are. As stated by Fellegi, "data collection typically involves compromises between the concept a decision-maker might wish to measure (the "ideal concept") and what is possible and practical to measure (the "operationalized concept")."[1] Such difficulties are endemic to data collection and are not easily resolved. A specific example in the context of HEGIS financial data would be "instruction" expenditures. As an "ideal" concept, it is clear that instruction happens

[1]Ivan P. Fellegi, Assistant Chief Statistician Social Statistics, Statistics Canada in Data, Statistics, Information--Some Issues of the Canadian Social Statistics Scene. Statistical Reporter, April 1980, pp. 168-181.

in a variety of settings (in the classroom, in the dormitory, in a lecture, in a "language" house, at a concert) using a variety of resources (faculty, other students, visiting lecturers, facilities, equipment, and time). Yet to represent these "operationally" in this case, we pick a single medium (money) and somewhat arbitrarily allocate certain portions of resources to this function (as opposed to doing precise studies of time and resource allocations) to reflect the extent of activity and costs in this area. These allocations are made despite joint product problems among instruction, research, and other program areas in terms of faculty time, space and equipment use, etc.

The resulting data are therefore an abstraction of reality, and judgments are needed about the "quality" of the data as an abstraction. Statistically, quality is traditionally judged in terms of the validity of the data in approximating reality, the reliability of the data in repeatedly measuring that reality, and the accuracy of the data in terms of how closely it measures reality.

NCES periodically conducts validation studies to assess data quality. In addition, various institutions, state agencies and other users have been concerned with assessing the quality of these data. Studies such as those conducted by Minter and by Andrews suggest that the quality of the HEGIS financial data is improving. At NCHEMS, we are attempting to develop a set of procedures we can use to assess data quality in a broad way as we acquire new data tapes. The procedures use a variety of common measures (e.g., state and local appropriations per student, instruction expenditures per student, operation and plant maintenance per assignable square feet, etc.) to examine the data reported by institutions of various types to identify unusual values. Where such values are found, we contact the institutions to determine if such occurrences are correct or not.

Continuing efforts to assess data quality are needed. In those areas found to be problematic, NCES should consider a) further definitional clarification, b) changes in existing survey forms (in the categories used), and/or c) supplementary surveys if warranted. Through the publication of a series of guides by NCHEMS under NCES sponsorship, significant steps in this direction have already been completed.[2] An additional step of providing feedback to those reporting data (through institutional profile reports developed using HEGIS financial and other data) should also help.

Integrity of data is a related dimension of data quality. All parties to the use of financial information must be assured that the data have not been tampered with, either in collection or analysis, to serve political purposes. To assure integrity, care must be taken that data are not changed arbitrarily (i.e., procedures governing all providers must be followed), that only recognized parties can submit and change data (i.e., there is a regular and anointed provider of data), that the data are widely and generally shared, and that the analysis performed is subjected to widespread scrutiny. The responsibility for the integrity of data is clearly broadly distributed among providers, collectors, researchers and the ultimate users of these data.

- *Relevance of Financial Data for Decisionmaking*

The need for and applicability of financial data can only be judged by the users of such data. In higher education, there have recently been a large number of users of HEGIS financial data, indicating that such information

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[2] Douglas H. Collier and Richard H. Allen, Higher Education Finance Manual, 3 vols. (Boulder, Colo.: National Center for Higher Education Management Systems, 1980); Richard H. Allen, HEGIS Financial Reporting Guide: 1980 Edition (Boulder, Colo.: NCHEMS, 1980); Douglas J. Collier, The Value of Uniform Financial Data for the Institution and the State: A Case Study (Boulder, Colo.: NCHEMS, 1980).

is highly relevant. At issue then is whether there are certain changes that should be made to increase the relevance of this data set to specific users. For NCES as a "general statistical agency," attempting to serve a multiplicity of users, this task is a particularly difficult one. As a result, they must seek to assure that the process used in selecting data for collection and dissemination is broadly representative of higher education.

- *Accessibility of Financial Data*

While HEGIS financial data are potentially relevant to a great many decisions in higher education, their accessibility for these decisions is not always apparent. Their existence may be unknown, the process of acquiring their may be too complicated or expensive, or other factors may interfere with their use. NCES has continued to experiment with a variety of dissemination strategies (EDSTAT, preliminary release newsletters, special reports, computer tape distribution, etc.) to facilitate and encourage the use of these data. The recent increase in their use attests to the success NCES is achieving in this domain. However, the experiences of this researcher in using HEGIS financial data at a detailed level suggests that use of these data at this level of detail is quite complicated. Developing familiarity with their content, comprehending the documentation that is provided with computer tapes, adjusting to changes in form and content of documentation, identifying which institutions are included year to year, and how they are classified (as part of a system or separate campus), perceiving limitations in the data are all important tasks that precede actual use of the data for analysis. For many users, such an investment in time and effort is too costly. At issue then is whether NCES can accomplish more of these tasks centrally as a way of encouraging greater use of these data. The accumulated experience of a number of researchers who have used these data could be utilized by NCES to aid this process.

- *Timeliness of the Data*

Timeliness is well recognized as one of the most important attributes of data. Timeliness requires that there be a minimum amount of delay between the time data are collected and compiled and finally released. Such promptness, however, also represents a tradeoff between a quick response that may produce unreliable data, as opposed to reliable figures that take too long to generate.

NCES has substantially improved the timeliness of HEGIS financial data. To further improve turnaround time, NCES should continue to use the SHEEO Network to obtain more prompt responses from institutions, should consider shifting more of the editing responsibility to the state level, and should consider a standard sample of institutions who are prompt respondents for calculating preliminary release figures. In addition, efforts by NCES to provide feedback to institutions in the form of institutional profiles would provide direct incentives to these institutions to participate more actively in HEGIS.

- *Cost Effectiveness of Data*

The process of obtaining data is a continual balancing act between the costs of acquiring them in light of the benefits of using them. These costs are experienced among all parties--the institutions reporting the data, NCES in collecting them, researchers in analyzing them, and users in obtaining and applying them. These costs are also important to consider as part of any efforts to improve data quality, relevancy, accessibility, and timeliness. Further elaborations in definitions, changes in procedures, and other efforts to improve the accuracy of data all entail further costs. At issue then is determining what the proper balance is between improved

precision given its cost. The cost of following all professors in person to calculate instruction expenditures is obviously too great. But what is a "reasonable" cost? For institutions, some of whom never use these data, any costs are unreasonable. A better balancing of costs and benefits thus appears warranted. The provision of institutional profiles is one suggestion in this context to improve the "benefit" side of this equation.

The foregoing section has identified some of the factors that affect the utility of data (i.e., data quality, relevance, accessibility, timeliness and cost-effectiveness). The next section looks at how these data are collected and used as a basis for identifying strategies to improve this process. Improvements in the process thus provide the basis for improvements in the utility of the data.

Process of Data Collection and Use

The process of collecting and using data is obviously quite complex. This author has identified at least six major phases--data collection design, data collection, editing, release, analysis, and use--with a variety of substeps in each area (see Figure 1). While the steps themselves are complicated enough, the process is further complicated by the fact that a) all the phases are interrelated (e.g., the editing stage affects analysis, use affects succeeding data collection designs, etc.) and b) there are a large number of participants in this process (i.e., data providers, data collectors, researchers, users), each of whose actions affect the whole process.

Efforts to improve the utility of HEGIS finance data are therefore themselves necessarily complex. For example, changing a definition to provide greater comparability and hence improved use will have to be examined in

Figure 1

Model of the
Data Collection and Use Process

PROCESS	PARTICIPANTS (M = Main Responsibility; IH = Involved Heavily; IS = Involved Somewhat)			
	Data Provider	Data Collector	Researcher	User
I. Data Collection Design				
• Enunciation of need/use	IS	M	IS	IH
• Selection of data for collection	IH	M	IS	IH
• Pre-test with providers and users for feasibility and utility	IH	M	IS	IH
• Notification of plans	IH	M	--	--
• Subsequent redesign and clarification	IH	M	IS	IS
II. Data Collection				
• Provider response	M	IH	--	--
• Hand or machine response	M	IH	--	--
• In-state editing	M	--	--	--
• Response time	M	--	--	--
III. Editing				
• Continuity of contractor	--	M	--	--
• Interaction with collector staff	--	M	--	--
• Within file edit	--	M	--	--
• Cross-file edit	--	M	--	--
• Periodic validation studies	IH	M	--	--
• Provider feedback	IH	M	--	--
• Subsequent edit after release	IH	M	IH	IH
IV. Release				
• Preliminary estimates	IS	M	IH	IH
• Full release (timeliness)	--	M	--	--
• Establish fixed and regular publication schedule	--	M	IS	IH
• Format of release designed to facilitate use	--	M	IH	IH
• Documentation of editing	--	M	--	--
• Subsequent documentation of later edits	--	M	--	--
• Dissemination efforts	--	M	--	--
V. Analysis				
• User, provider, collector input on methodology and data	IH	IH	M	IH
• File examination and structuring	IS	IS	M	--
• Unit of analysis (comparison groups)	IH	IH	M	IH
• Comparability issues	IH	IH	M	--
• Documentation of methods and limitations	--	--	M	--
• Cautionary notes	--	--	M	--
• Feedback and revisions	IH	IH	M	IH
VI. Use				
• On-site clarification	IS	IS	M	IH
• Availability of supplementary and clarifying analysis	IH	IH	M	IH
• Understanding of limitations	IH	IH	IH	M
• Involvement of local groups in use	IH	--	--	M
• Feedback and revisions in data and methods	IH	IH	M	IH

light of its feasibility for reporting by institutions. Such changes therefore are dependent on the recognition of shared responsibilities among all participants to this process. In Figure 1, the author has attempted to identify the relative roles of these four types of participants.[3] For example, the first step in data collection design--enunciation of need/use--is depicted as the main responsibility of NCES, a heavy responsibility of different users, and a lesser responsibility of data providers and researchers. A clarification of perceptions of these roles among the parties to this process is a beginning step for improving the process.

There are at least three major implications of this model of the data collection and use process. The first is that the process of improving HEGIS financial data is an evolutionary, and not a revolutionary, task. The interdependent and recurring nature of this process suggests that to be effective, changes and improvements will necessarily have to occur over time. Drastic changes in data collection procedures, for example, cannot be readily accommodated by institutional information systems instantaneously and hence are likely to be ignored or inadequately responded to. A more measured and time-phased process is thus required. However, given the desire and need for high quality information, the deferral of improvements is a difficult one requiring a substantial degree of patience among participants.

A second implication is that changes in the process require substantial amounts of coordinative efforts to involve many different participants. Getting the attention and active support of these different actors is a major task in itself. The active efforts of concerned parties is thus essential. The group assembled in this meeting is at least a starting point in this regard.

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[3] While four separate participant roles have been indicated, it should be noted that any individual group may carry out multiple roles (e.g., an institution may be a data provider, a researcher and a data user, shifting roles at any given time).

Third, improvements in the utility of HEGIS financial data will continue to occur only through further use of these data. As Raymond Bauer has stated in Social Indicators, "the conclusion seems to be that rather than do nothing it is preferable to start out with bad data, warn everyone about the defects and limitations, and aim at gradual improvement through use." While HEGIS financial data have progressed substantially beyond the initial stages reflected in Bauer's statement, that process of improvement remains an evolutionary set of gains to be achieved through continuing use of HEGIS financial data. To stop use of these data in hopes of future improvements is unlikely to serve that goal.

Utility of HEGIS Financial Data--A Researcher's Perspective

While the foregoing sections have looked at the generic factors that affect the utility of HEGIS financial data and the process and participants involved in collecting and using that data, this section will identify some of the advantages and problems associated with using these data--from this researcher's perspective. In addition, specific actions that have been taken in response to specific problems will be discussed.

This researcher has been a user of HEGIS data since 1974. NCHEMS has acquired all HEGIS tapes from 1971 to the present and uses these data extensively in the research program of the Center as well as more recently to provide tailored data reports to institutions and state agencies on request.

Relevance of HEGIS Financial Data to Researchers

Upon undertaking any research activity, the first decision to be made is whether to use existing data or to collect one's own data set. There

is no question that use of existing data will require compromises in research design. A general statistical data set such as HEGIS is unlikely to be an exact fit with the needs associated with a specific research undertaking. This lack of exact fit will require certain assumptions and/or extrapolations and even perhaps some supplementary data collection. However the problems associated with not using existing data and embarking on one's own collection effort must also be considered. The cost of collection, the burden on respondents, the confusion caused by another and likely conflicting data set, and the probable lessening of data quality that is associated with ad hoc or first-time data collection efforts are not to be minimized. Given that many of the analyses of HEGIS financial data at NCHEMS are at the detailed (i.e., institutional) level, these difficulties necessitated the use of HEGIS financial data.

To compensate for some of the limitations in this data set, a series of assumptions have been made in various applications. For example, in the McCoy/Halstead[4] study of financing, the presentation of state and local appropriations implies that these funds are applied to educational and general expenditure purposes where in fact they may also be used for hospitals, auxiliaries and/or independent operations. However in the absence of data in a source/use format, such assumptions are necessary.

To assure that the uses made of HEGIS finance data were both appropriate and relevant to specific decisionmaking needs, NCHEMS has always utilized the opinions of experts and constituents in making these assessments. The use of task forces, field review of data and reports, peer review by other researchers, and subsequent redesign efforts have provided a rich source of external input on the data and methodology used in our work. Specific

[4]Marilyn McCoy and D. Kent Halstead, Higher Education Financing in the Fifty States Interstate Comparisons Fiscal Year 1976, review edition (Washington, D.C.: NCHEMS and National Institute of Education, 1979).

examples of changes resulting from such input include a different and more detailed categorization of institutions, changes in the measures used in specific studies, additional analysis to enhance the relevance of particular study, and initiation of supplementary surveys.

- *Accessibility of HEGIS Finance Data to Researchers*

As previously indicated, the process of readying the financial data for analysis is a complex one despite substantial accumulated experience with these data on the part of this researcher. The documentation associated with the HEGIS tapes is often not sufficient from a user's perspective. While there have been substantial improvements in the documentation provided by NCES with their data tapes, documentation on older tapes (pre-1976 data) is sketchy and difficult to interpret. Even with the improvements in documentation in recent periods, the documentation that is provided is too terse (not explanatory enough) in many cases. Areas where further documentation is needed include: explaining how the universe of institutions changes year to year, how the reporting universe is structured (e.g., what is a branch campus, main campus, system office), how the data have been edited, what "imputed values" mean and identifying changes in the data collection instruments as they occur. The current tapes as provided also include a variety of extraneous codes and records that are distracting and inefficient for analysis. This researcher would encourage NCES to continue their plans to develop a "users manual" to accompany the distribution of tapes. In addition, to the extent possible, a deletion of extraneous material from these tapes, and the development of a consolidated time series of tapes would greatly facilitate the utility of these tapes--

to both experienced and novice users. In the process of making such improvements, the experience of past users can be used.

- *Quality of HEGIS Finance Data for Research*

Over the six-year period that this researcher has used HEGIS data, there has clearly been major improvement in the quality of financial data as judged by many different institutions, states, and researchers in higher education. Nevertheless, important problems remain. A specific listing of some of the more obvious limitations appears in Financing Higher Education in the Fifty States, FY76, Appendix A, Section 2 and reprinted in the materials for this meeting. These comparability issues are not visible to someone analyzing a computer tape of HEGIS finances. Rather, they have been identified through the publication and use of the HEGIS finance data by those in the field. Since many of the limitations listed in that study were related to differences in practices among the states, a survey[5] has recently been developed and sent to the states to determine the prevalence and magnitude of these problems. The results of this survey will be available for incorporation in analysis, inclusion in data caution sections, and for purposes of conducting sensitivity studies to determine the impact of data problems on analytical results.

Some of the data limitations discovered in the process of analyzing and using HEGIS financial data are in fact errors in reporting that can be corrected. What is needed is a process, maintained by NCES, for correcting known data errors. At the current time, no such procedure exists. A potential model in this regard is the practice of the National Science Foundation whereby an institution can contact NSF and correct any errors for prior years once identified.

[5]Gail Norris, Executive Coordinator, Washington Council for Postsecondary Education, is spearheading this effort.

More typical of the data limitations however are problems with the procedures themselves (i.e., institutions report correctly but because of differences among institutional and state practices the data are not comparable). For example, certain vocational-technical institutions are not part of the HEGIS universe and debt service may in one case be paid out of current institutional funds and in another case handled by a separate state agency. In some cases, a researcher can analytically compensate for some of the known data problems. For example, in the case of differences in the organization of medical schools, it is possible through the HEGIS degree file to identify how such schools are organized. This knowledge can be applied analytically, if deemed appropriate, to separately report data for those institutions that have an integrated medical school from those who don't.

To address problems associated with existing procedures, NCES should authorize a reexamination of financial reporting practices from the perspective of higher education financial data users, involving others in that process (institutional data providers, state representatives, and researchers). Because any changes that would emanate from such an effort would not be achieved immediately, continued efforts to highlight these data limitations and to caution users of these data must continue.

Other efforts to improve data quality could include:

- better feedback to NCES from the higher education community of known data problems
- feedback from institutions using institutional profile reports
- use of cross-file editing
- involvement of the states in providing local assistance in interpreting reporting procedures

- more interaction by NCES staff with edit contractor to assure procedures are followed properly and completely documented
- institutional involvement when edit questions arise the data they have reported

- *Timeliness of HEGIS Finance Data for Research*

While NCES has made remarkable progress in their release of HEGIS finance data, some additional improvements are probably possible. Such improvements however are probably more dependent on efforts within the postsecondary community than on NCES efforts.[6] Improved response times by institutions is one needed step. Efforts by a state postsecondary agency to encourage and facilitate this response have proven helpful in the past and thus should be continued. Secondly, a shifting of many editing responsibilities to the local level (i.e., state level) will likely facilitate better timeliness and improved data quality. In general, NCES is too removed from the scene to be in a position to judge the accuracy of data. The Maryland example described by Lapovsky is a good case in point, showing effective state editing to improve comparability in a timely fashion.

- *Cost-Effectiveness of HEGIS Financial Data for Research*

It has already been stated that compared to the cost of directly collecting financial data from approximately 3000 institutions oneself, HEGIS financial data are very cost-effective for research purposes. Changes in the documentation already detailed would further reduce costs. From a more general user perspective, more efforts by NCES to publish summaries and analyzed reports would make use of these data economically feasible for more users.

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[6]However, a regular schedule for the release of financial tapes would greatly facilitate the scheduling of research work and hence its timely release for use.

The further development of data services to meet the needs of individual users such as institutions would also improve the cost-effectiveness of using these data sources.

While the previous comments relate to the utility of HEGIS finance data from a single researcher's perspective, Figure 2 provides a listing of recommendations at various stages in the data collection and use process and for different participant groups. Recognizing the shared nature of these responsibilities, agreements to a process of change by each of these participant groups is required.

Steps for the Future

In addition to the specific recommendations identified in Figure 2 to improve the utility of HEGIS finance data, the following three general steps are proposed:

1. Develop a plan for broad-based participation in a review of HEGIS financial data.

   It has been five years since the last set of changes to the HEGIS finance form were implemented. It now seems appropriate in light of the current recognition of limitations in that data set to embark on a revision effort. Such a revision should focus heavily on the quality and relevance dimensions of the HEGIS finance data. Users of HEGIS finance data should be heavily represented, along with institutional data providers, NCES and the research community.

2. Identify the factors that affect the utility of HEGIS finance data and prioritize recommendations for changes.

   While five factors were identified in this paper, there are probably additional factors that should be considered. Specific

Figure 2

Recommendations for Changes in NEGIS Finance Data Collection and Use Process

Process	Participants: Provider Institutions	Data Collector NCES	Researcher	Users
I. Data Collection Design	• Inclusion perhaps through an ongoing institutional panel in redesign process (NCES has state and association panels but no explicitly institutional group)	• Additional clarification to the postsecondary community of why collecting data and how they are used • Regularize a redesign process to evaluate needed changes to survey forms • Utilization of an institutional panel, in addition to the state and association panel for input	• Better articulation of research needs • More consideration of using existing data vs. collecting new data • If collect own data, more use of standard definitions, etc. • Use of pre-tests	Better articulation of research needs/uses
II. Data Collection	• Better enunciation to collector of problems in filling out forms • Work with state agencies to ensure accuracy (state editing) • Improved response time	• More efforts to work with institutions and states in explaining requests, answering questions and facilitating response (recent examples of this are the regional meetings now underway)		
III. Editing	• Cooperation with NCES in the edit process • Review any institutional profiles or reports sent and correct if necessary	• Concern in selecting/editing contractor for continuity and cooperation • More interaction with contractor on editing to assure policies are followed • Initiation of cross-file edits using frequently used measures ($/student, O&PM per ASF, etc.) • Creation of a multi-year correction edit capability • Interact more with provider for questionable responses • Build institutional profile and send back to provider using new and past data to aid editing process through feedback • Work with the states in editing of data	• Communicate knowledge of any known problems to the data collector	Communicate knowledge of any known problems to the data collector
IV. Release	Sample participation for quick release	• Use a sample for early release • Better documentation of estimates, limitations, better documentation of tapes • Develop policies for notifying other parties of subsequent edits • Continue to develop regular reports summarizing key data findings	Feedback on usefulness of early release	Feedback on usefulness of early release
V. Analysis	• Assist in development of useful analysis • Conduct own analysis	• Assist in development of useful analysis • Conduct own analysis • Build more detailed institutional classification systems into data files	• Convene representatives from user, provider, collectors to gain input on methodology and data • Develop standard routines for assessing the quality of the data files--conduct spot verification checks in areas of question	• Assist in development of useful analysis • Conduct own analysis

Process	Provider Institutions	Data Collector NCES	Researcher	Users
			• Carefully and analytically select comparison groups • Identify and document all known comparability issues--in areas where data permit do supplementary analysis to compensate (e.g., medical schools) • Use supplementary data collection if needed • Provide user guidance in interpreting results • Peer researcher review of methods • Utilize feedback to revise and further develop methods (through task force and other such groups)	
VI Use	Work with state groups in the interpretation and use of analysis	• Develop information profiles that are more "micro" in orientation to support further detailed analysis • Monitor uses of information as a basis for identifying needed changes	• Where specific questions or needs arise, provide direct assistance to those requesting it • If capability supports it, provide additional detail for user-selected peer groups on request • Provide feedback to data collectors on needed changes	• If research is not fully understood, request clarification from researchers • If further information on more select peer groups is needed, obtain it • Involve local institutional representatives in interpretation and use of information • Work with data collectors and researchers to improve data and analysis

recommendations should be developed in each area and then prioritized in order to focus the efforts for change.

3. Promote the widespread use of HEGIS financial data.

Given that improvements in the quality of data are so dependent on the extent of its use, it is important that the higher education community should work together to support the use of HEGIS; to discourage the proliferation of duplicative and burdensome data collection efforts; and to continue to document limitations in existing data in order to support cautious and informed use of these data, concurrent with efforts to improve these data.